AERI Calibration Confirmation Using Third Black Body (CAL)

I. Purpose:

The purpose of this procedure is to describe steps performed by RESET if standard calibration is required using a third black body (BB).

II. Cautions and Hazards:

- Same as PRO(AERI)-001.

III. Requirements:

- Calibrated black body (BB)

IV. Procedure:

A. FEP S/W Setup

1. Create directory C:\configure\setup\op.
2. Make a backup of the operational files by copying from c:\config to c:\config\setup\op the files:

   CHANNEL.MAP

   MIRROR.BEG

   ABCVALS.NUM
3. Create directory C:\config\setup\3body.
4. Three files must be created/copied to this directory:
   - CHANNEL.MAP - appropriate to the instrument with CHANNELS 12, 13, & 14 assigned to third body thermistors.
   - MIRROR.BEG - with three views.
   - ABCVALS.NUM - with appropriate coefs. (For the reference B (serial #10 or #`8) for CHANNELS 12, 13, & 14 which are linked to NBBtopTemp, BNNapexTemp, & NBBbottom Temp respectively.)
5. Install the files needed for the third body comparison. (Copy the three files from c:\config\setup\3body to c:\config.)
6. Stop AERI data acquisition and clear the date from the current date (DEL_A_DR can be run from the REXX folder).

B. Setting Up the H/W:

1. Ensure it possesses the required components:
   - The Reference BB (serial #10 or #18).
   - The Third BB Calibration Test Box. (This box includes four cables that exit from the box. For this procedure, only three cables are used.)
2. Ensure there is no power applied to the IPSD.
3. Attach the reference B at the SKY view position taking care that it is against the registration buttons.
4. Connect the Third B Calibration Test Box to the system.
   - All connectors are labeled; connect the unique connector to the reference B (for serial #10, with its own adapter cable).
   - Connect the other "D" connectors to the IPSD as labeled (P2 & P4) and located on the right side of the IPSD box facing the interferometer.
   - Next attach the two cables P2 & P4 that were attached to the IPSD to the labeled connectors on the Third B Calibration Test Box.
5. The reference BB uses the ABB temperature controller; set the setpoint on the AERI rack (Left thumb wheel switch) to 962.
6. Turn the ABB switch ON.
7. Apply power to the IPSD. (After approximately 15 minutes, the third B will be heated to reference temp (approximately 317 degrees K).)

C. Data Acquisition:

1. Start AERI data acquisition.
2. Allow data acquisition to run as long as practical but for a minimum of 30 minutes.

D. Result Analysis:

1. Use BLTVIEW to compare Third BB computed brightness temperature to the measured temperature via the third body thermistors; all data used is from the *.SUM file.
2. Bring up a window of the LW & SW brightness temperature (select DATA) and overlay metadata for the NBBapexTemp (Third BB) using a common Y only. (The X axis should be set from 500 to 3000 WN. The Y axis (TEMP) should be set from 317 to 318 degrees. Temperature should be within .5 degrees of agreement for both the LW & SW in the "non noisy" part of the spectral range.)

E. End of Procedure:

1. Turn OFF ABB temperature controller and dial setpoint to 000.
2. Remove the Third BB Calibration Test Box and reinstall the IPSD cables.
3. Restore the three files from C:\config\setup\op to C:\config.
4. Send copy of c:\config files to Mentor and TWPPO.

V. References:

None.

VI. Attachments:

None.